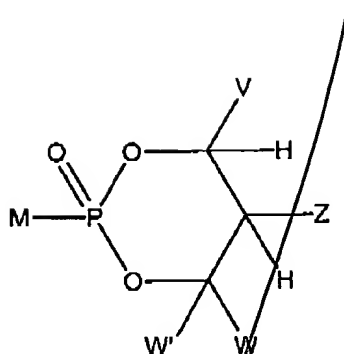


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Formula I

wherein:

V, W and W' are independently selected from the group consisting of hydrogen, alkyl, aralkyl, alicyclic, aryl, substituted aryl, heteroaryl, substituted heteroaryl, 1-alkenyl, and 1-alkynyl; or

together V and Z are connected via an additional 3-5 atoms to form a cyclic group containing 5-7 atoms, wherein the cyclic group optionally contains one heteroatom and is substituted with a hydroxy, acyloxy, alkoxycarbonyloxy, or aryloxycarbonyloxy group attached to a carbon atom that is three atoms away from both oxygen atoms that are attached to the phosphorus atom; or

together V and Z are connected via an additional 3-5 atoms to form a cyclic group wherein the cyclic group optionally contains one heteroatom, and is fused to an aryl group, at the beta and gamma position to the oxygen attached to the phosphorus; or

together V and W are connected via an additional three carbon atoms to form an optionally substituted cyclic group containing six carbon atoms and is optionally substituted with one substituent selected from the group consisting of hydroxy, acyloxy, alkoxycarbonyloxy, alkylthiocarbonyloxy, and aryloxycarbonyloxy groups, wherein such substituent is attached to one of said carbon atoms that is three atoms away from an oxygen attached to the phosphorus atom; or

together Z and W are connected via an additional 3-5 atoms to form a cyclic group, optionally containing one heteroatom, and V must be aryl, substituted aryl, heteroaryl, or substituted heteroaryl;

together W and W' are connected via an additional 2-5 atoms to form a cyclic group, optionally containing 0-2 heteroatoms, and V must be aryl, substituted aryl, heteroaryl, or substituted heteroaryl; or

Z is selected from $-\text{CHR}^2\text{OH}$, $-\text{CHR}^2\text{OC}(\text{O})\text{R}^3$, $-\text{CHR}^2\text{OC}(\text{S})\text{R}^3$, $-\text{CHR}^2\text{OC}(\text{S})\text{OR}^3$, $-\text{CHR}^2\text{OC}(\text{O})\text{SR}^3$, $-\text{CHR}^2\text{OCO}_2\text{R}^3$, $-\text{OR}^2$, $-\text{SR}^2$, $-\text{CHR}^2\text{N}_3$, $-\text{CH}_2(\text{aryl})$, $-\text{CH}(\text{aryl})\text{OH}$, $-\text{CH}(\text{CH}=\text{CR}^2)\text{OH}$, $-\text{CH}(\text{C}\equiv\text{CR}^2)\text{OH}$, $-\text{R}^2$, $-\text{NR}^2_2$, $-\text{OC}(\text{O})\text{R}^3$, $-\text{OCO}_2\text{R}^3$, $-\text{SC}(\text{O})\text{R}^3$, $-\text{SCO}_2\text{R}^3$,

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$-\text{NHC}(\text{O})\text{R}^2$, $-\text{NHCO}_2\text{R}^3$, $-\text{CH}_2\text{NH}(\text{aryl})$, $-(\text{CH}_2)_p\text{OR}^{12}$, and $-(\text{CH}_2)_p\text{SR}^{12}$;

R^2 is selected from the group consisting of R^3 and hydrogen;

R^3 is selected from the group consisting of alkyl, aryl, alicyclic, and aralkyl;

R^{12} is selected from the group consisting of hydrogen, and lower acyl; and

p is an interger 2 or 3;

with the provisos that:

a) V, Z, W, and W' are not all hydrogen; and

b) when Z is $-\text{R}^2$, then at least one of V, W, and W' is not hydrogen, alkyl, aralkyl, or alicyclic; and

M is selected from the group that, attached to PO_3^{2-} , $\text{P}_2\text{O}_6^{3-}$, or $\text{P}_3\text{O}_9^{4-}$, is biologically active *in vivo* and that is attached to the phosphorus atom in Formula I via a carbon, oxygen, or nitrogen atom, with the proviso that M-PO_3^{2-} is not an FBPAse inhibitor;

wherein said compound of Formula I is converted to MPO_3H_2 by human liver microsomes; pharmaceutically acceptable salts of Formula I; and a pharmaceutically acceptable excipient.

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3. (New) The pharmaceutical composition of claim 2, wherein MH is 9-(2-phosphonylmethoxyethyl)adenine (PMEA) or analogues thereof.

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4. (New) The pharmaceutical composition of claim 2, wherein MH is 9-(2-phosphonylmethoxyethyl)adenine (PMEA).

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5. (New) The pharmaceutical composition of claim 2, wherein MH is selected from penciclovir, 3TC, ACV, PMPA, araC, ribavirin, and 5-fluoro-2'-deoxyuridine.

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6. (New) The pharmaceutical composition of claim 2, wherein MH is radiolabelled 2'-deoxy-5-Iodouridine.

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7. (New) The pharmaceutical composition of claim 6 wherein MH is 2'-deoxy-5- ^{131}I -iodouridine.